Strip mining: Impact on forests and wildlife

Surface mining of coal and precious minerals is dramatically increasing in the United States. Since 1965, strip mining has doubled in some areas of Kentucky and West Virginia. It has increased 30 percent in the West during the past seven years. The U.S. Forest Service is besieged with thousands of applications to strip-mine national forests.

This upsurge in strip mining has stimulated biologists to intensify studies of the impact of surface mining on forests and wildlife. Findings were reported at the annual meeting of the American Institute of Biological Sciences in Amherst, Mass.

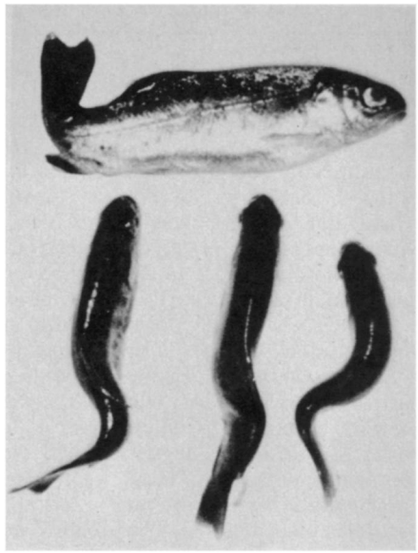
"One of the most serious results of surfaced mining is degradation with bulldozers," reports Paul Packer of the Forest Service in Logan, Utah. If trees are not razed they are left to stand as pathetic islands of greenery. Isolated trees not only lose their beauty, they are no longer capable of providing delicately balanced ecosystems for wildlife. The effects of surface-mining bulldozing can be seen on Bear Tooth Plateau north of Yellowstone National Park. The plateau is the nation's largest alpine tundra. Regrowth of natural vegetation is extremely slow.

Pollutants from surface mining can also harm or kill fish. John Goettl, a biologist with Colorado's Game, Fish and Parks Division, found that if zinc effluents don't kill trout first, the tails of the trout will turn black or their spines will become curved by lead effluents, or their offspring will be killed by silver effluents. Surface mining, for oil shale for example, releases sediment into streams that can prevent fish from mating and laying eggs, Packer and Donald L. Batch of Eastern Kentucky University report.

Surface mining can also make water so acid certain aquatic species increase while others decrease. If water is extremely acidic (a pH of 3.5), only bloodworms survive. If it is somewhat less acidic (pH 3.5 to 4.5), dragonflies may also make it. If it is only mildly acidic (pH 4.5 or more), fish may also survive. Streams in eastern Kentucky contain so much acid they are a sickening orange, red or yellow. The Ohio River is so swollen with acids from surface mining that it is largely unsuitable for aquatic life.

Surface mining also destroys feeding areas for big game and birds of prey, R. L. Hodder of Montana State University points out. Animals are then forced into adjacent areas that may already be fully populated. Birds of prey are also endangered by fish and insects whose systems are full of lead, silver or other heavy metals that come from surface mining. Says Goettl, "Insects' ability to accumulate lead is fantastic."

So far, no one has done much to keep surface mining from hurting forests and wildlife. But industry is making efforts to reclaim lands after they have been mined (SN: 7/7/73, p. 11). Whether reclaimed lands will integrate themselves back into the original ecosystems, only time will tell. On one grassland Hodder helped reclaim, only five of the original sixty plant species returned. Apparently the reclaimed soil was too alkaline. □



Goettl

Lead effluents from surface mining cause spinal curvature in the trout.

Packer

Bulldozer disrupts delicate evergreen ecosystem on the Bear Tooth Plateau.

Wild rice—a new boost to Minnesota

Northern Minnesota is an economically depressed region. Its once-flourishing dairy industry has declined; mining and forestry are no longer as important as they once were. But in recent years farmers, scientists and industrialists have been working on a new crop that might give a boost to the area's economy—wild rice.

Wild rice is not actually a rice but an aquatic grass that grows in southern Canada, northern Minnesota and Wisconsin. Sixty percent of the world's wild rice crop is produced in Minnesota. Traditionally, the "rice" is harvested by canoe. Minnesotans buy a harvester's license, similar to a hunting license, and harvest during a yearly open season regulated by law.

Attempts to domesticate the grain have met many obstacles. Where to grow the "rice" was the first concern. Artificial lakes were first suggested; now paddies are used. Second, the grain

John Bedish, a Soil Conservation Service state biologist, holds wild rice grain grown in paddy in Minnesota.

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